PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P2137PCT00	FOR FURTHER ACTION	See Form PCT/PEA/416
International application No. PCT/NO2004/000174	International filing date *(day/month/year)* 11.06.2004	Priority date *(day/month/year)* 13.06.2003

International Patent Classification (IPC) or national classification and IPC

H04N9/12, H04N9/31

Applicant

CYVIZ AS

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. ☒ *sent to the applicant and to the International Bureau)* a total of 2 sheets, as follows:

   ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

   ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

   ☒ Box No. I   Basis of the opinion

   ☐ Box No. II   Priority

   ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   ☐ Box No. IV   Lack of unity of invention

   ☒ Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   ☐ Box No. VI   Certain documents cited

   ☐ Box No. VII Certain defects in the international application

   ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 11.04.2005	Date of completion of this report 29.11.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Lim, J Telephone No. +31 70 340-4219

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:

☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-11   as originally filed

Claims, Numbers

2-11   as originally filed

1   received on 13.04.2005 with letter of 11.04.2005

Drawings, Sheets

1-3   as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
☐ the description, pages
☐ the claims, Nos.
☐ the drawings, sheets/figs
☐ the sequence listing *(specify)*:
☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
☐ the description, pages
☐ the claims, Nos.
☐ the drawings, sheets/figs
☐ the sequence listing *(specify)*:
☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	10
	No:	Claims	1-9,11
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-11
Industrial applicability (IA)	Yes:	Claims	1-11
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V.

1   The following documents are referred to in this communication:

D1:   WO 02/19704 A (HONEYWELL INT INC) 7 March 2002 (2002-03-07)
D2:   MAJUMDER A ET AL INSTITUTE OF ELECTRICAL AND ELECTRONICS
      ENGINEERS: "Achieving color uniformity across multi-projector displays"
      PROCEEDINGS VISUALIZATION 2000. VIS 2000. SALT LAKE CITY, UT,
      OCT. 8 - 13, 2000, ANNUAL IEEE CONFERENCE ON VISUALIZATION, LOS
      ALAMITOS, CA : IEEE COMP. SOC, US, 8 October 2000 (2000-10-08), pages
      117-124, XP010524593 ISBN: 0-7803-6478-3

2   INDEPENDENT CLAIM 1

2.1   The present application does not meet the criteria of Article 33(1) PCT, because
the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.
Document D1 discloses (the references in parenthesis applying to this document):

Method for accurately and efficiently calculating the input signals to at least two light
projectors for creating an invisible transition between them (p.4, l.30-p.5, l.15),
wherein the dimensions of the transition zone is known, wherein the dimensions of
the transition zone is known, and the emitted light toward the transition zone from
each projector is based on a predetermined transfer function from input signal to the
projected image in the transition zone, and wherein the input to the light projectors is
provided from a tabulated function of using red, green, blue and blending factor, said
tabulated functions for each projector at each point providing a sum constituting the
transfer function in the point, so as to obtain predictable image characteristics in the
transition zone (p.9, l.12-18; p.12, l.13-p.13, l.1), the projected image at each position
in the transition zone thus being constituted by the contribution from each of the
projectors, the ratio of the contribution from each projector being determined by the
chosen blending factor for this position (p.13, l.18-20).

The last sentence of claim 1, is merely a statement of fact, and does not add any
subject matter. Note that D1 uses independent functions for the individual colours.

However, it is obvious to the skilled person that a single function taking combinations of the colours as input could be used if computational resources admit it. See for example D2, also disclosing the subject matter of claim 1, which discusses this (section 4.4).

3   INDEPENDENT CLAIM 11

3.1   The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 11 is not new in the sense of Article 33(2) PCT.

Control device for at least two image projectors being adapted to project overlapping images at a surface and defining a transition zone between the images from each projector, the device comprising memory means for storing a tabulated function for each projector, and a transfer function describing the relationship between input signal and emitted light for each projector, the sum of said tabulated functions describing the transfer function, and control means for applying said tabulated functions on said input signal to each projector so as to obtain a predictable image characteristics in the transition zone between the at least two projected images (p.13, l.8-p.14, l.31).

4   DEPENDENT CLAIMS 2-10
Dependent claims 2-10 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

C l a i m s ⑲

1. Method for accurately and efficiently calculating the input signals to at least two light projectors for creating an invisible transition zone between them,

wherein the dimensions of the transition zone is known, and the emitted light toward the transition zone from each projector is based on a predetermined transfer function from input signal to the projected image in the transition zone, and

wherein the input to the light projectors are provided from a tabulated function of using red, green, blue and blending factor, said tabulated functions for each projector at each point providing a sum constituting the transfer function in the point, so as to obtain predictable image characteristics in the transition zone,

the projected image at each position in the transition zone thus being constituted by the contribution from each of the projectors, the ratio of the contribution from each projector being determined by the chosen blending factor for this position.

2. Method according to claim 1, wherein the input to the light projectors is provided by interpolating the tabulated function.

3. Method according to claim 1 wherein the transfer function is only used ahead of time and not during edge blending when calculating input to projectors.

4. Method according to claim 1 wherein the inverse transfer function is only used ahead of time and not during edge blending when calculating input to projectors.

5. Method according to claim 1 wherein the transfer function is obtained by measuring the relationship between the input image data and the characteristics of the emitted light.

6. Method according to claim 1, wherein the transfer function is applied to input data to the projector so as to condition the data to obtain the required image characteristics.

7.   Method according to claim 1, comprising the step of interpolating between the light characteristics of a first projector to the light characteristics of a second projector over the image transition zone area, so as to provide a smooth transition between the projected images.

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8.   Method according to claim 1, wherein the transfer function is determined by known signal to the projector, measuring the emitted light and calculating the transfer function from the measured relationship between applied signal and measured light characteristics.

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9.   Method according to claim 8, wherein the applied signal is a ramp from zero output intensity to full output intensity of the projector.

10.   Method according to claim 8, wherein the transfer function is measured

15   and calculated as an automatic part of the projector start up procedure.

11.   Control device for at least two image projectors being adapted to project overlapping images at a surface and defining a transition zone between the images from each projector, the device comprising memory means for storing a tabulated function

20   for each projector, and a transfer function describing the relationship between input signal and emitted light of each projector, the sum of said tabulated functions describing the transfer function, and control means for applying said tabulated functions on said input signal to each projector so as to obtain a predictable image characteristics in the transition zone between the at least two projected images.

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